FILE 'REGISTRY' ENTERED AT 13:02:07 ON 26 NOV 2008

L1 STRUCTURE UPLOADED
L2 0 S L1
L3 STRUCTURE UPLOADED
L4 0 S L3
L5 0 S L1 SSS FULL
L6 STRUCTURE UPLOADED
L7 0 S L6
L8 0 S L6 SSS FULL
L9 STRUCTURE UPLOADED
L10 15 S L9
L11 STRUCTURE UPLOADED
L12 6 S L11
L13 248 S L11 SSS FULL

FILE 'HCAPLUS' ENTERED AT 13:09:16 ON 26 NOV 2008

L14 512 S L13
L15 1377430 S NUCLEOTIDE OR DNA OR RNA
L16 8 S L14 AND L15
L17 90029 S SILYL OR TMS OR TBDMS OR TRIMETHYLSILYL OR BUTYLDIMETHYLSILYL
L18 7453 S INTERNUCLEOTIDE OR PHOSPHODIESTER
L19 80 S L17 AND L18
L20 75 S L19 AND (PY<2004 OR AY<2004 OR PRY<2004)

```
=> file registry
COST IN U.S. DOLLARS                                SINCE FILE      TOTAL
                                                      ENTRY    SESSION
FULL ESTIMATED COST                                    0.21       0.21

FILE 'REGISTRY' ENTERED AT 13:02:07 ON 26 NOV 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.
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Property values tagged with IC are from the ZIC/VINITI data file
provided by InfoChem.

STRUCTURE FILE UPDATES:   24 NOV 2008  HIGHEST RN 1075293-66-1
DICTIONARY FILE UPDATES:  24 NOV 2008  HIGHEST RN 1075293-66-1

New CAS Information Use Policies, enter HELP USAGETERMS for details.

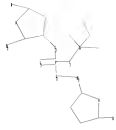
TSCA INFORMATION NOW CURRENT THROUGH July 5, 2008.

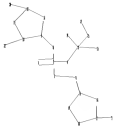
  Please note that search-term pricing does apply when
  conducting SmartSELECT searches.

REGISTRY includes numerically searchable data for experimental and
predicted properties as well as tags indicating availability of
experimental property data in the original document.  For information
on property searching in REGISTRY, refer to:

http://www.cas.org/support/stngen/stndoc/properties.html

=>
Uploading C:\Program Files\STNEXP\Queries\10550217silylphos.str
```





chain nodes :
1 3 4 7 8 14 20 21 22 23 24 25 26 27
ring nodes :
9 10 11 12 13 15 16 17 18 19
chain bonds :
1-3 1-4 1-7 1-8 4-23 7-14 8-9 10-21 12-20 14-15 17-22 23-24 23-25 23-26
25-27
ring bonds :
9-10 9-13 10-11 11-12 12-13 15-16 15-19 16-17 17-18 18-19
exact/norm bonds :
1-3 1-4 1-7 1-8 4-23 7-14 8-9 9-10 9-13 10-11 11-12 12-13 12-20 15-16
15-19 16-17 17-18 17-22 18-19
exact bonds :
10-21 14-15 23-24 23-25 23-26 25-27

G1:O,S

G2:C,O,S,N

Match level :
1:CLASS 3:CLASS 4:CLASS 7:CLASS 8:CLASS 9:Atom 10:Atom 11:Atom 12:Atom
13:Atom
14:CLASS 15:Atom 16:Atom 17:Atom 18:Atom 19:Atom 20:CLASS 21:CLASS 22:CLASS
 23:CLASS
24:CLASS 25:CLASS 26:CLASS 27:CLASS

L1   STRUCTURE UPLOADED

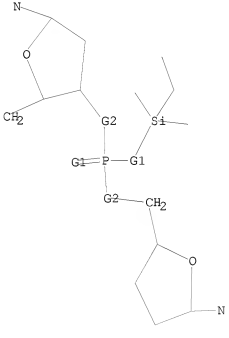
=> s l1
SAMPLE SEARCH INITIATED 13:02:52 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -   29 TO ITERATE

100.0% PROCESSED   29 ITERATIONS   0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS: ONLINE **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS: 257 TO   903
PROJECTED ANSWERS: 0 TO   0

L2   0 SEA SSS SAM L1

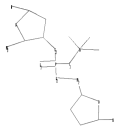
=> d l1
L1 HAS NO ANSWERS
L1   STR

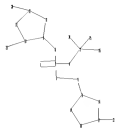


G1 O,S
G2 C,O,S,N

Structure attributes must be viewed using STN Express query preparation.

=>
Uploading C:\Program Files\STNEXP\Queries\10550217silylphos2.str





chain nodes :
1 3 4 7 8 14 20 21 22 23 24 25 26
ring nodes :
9 10 11 12 13 15 16 17 18 19
chain bonds :
1-3 1-4 1-7 1-8 4-23 7-14 8-9 10-21 12-20 14-15 17-22 23-24 23-25 23-26

ring bonds :
9-10 9-13 10-11 11-12 12-13 15-16 15-19 16-17 17-18 18-19
exact/norm bonds :
1-3 1-4 1-7 1-8 4-23 7-14 8-9 9-10 9-13 10-11 11-12 12-13 12-20 15-16

```
15-19  16-17  17-18  17-22  18-19
exact bonds :
10-21  14-15  23-24  23-25  23-26


G1:O,S

G2:C,O,S,N

Match level :
1:CLASS  3:CLASS  4:CLASS  7:CLASS  8:CLASS  9:Atom  10:Atom  11:Atom  12:Atom
13:Atom
14:CLASS  15:Atom  16:Atom  17:Atom  18:Atom  19:Atom  20:CLASS  21:CLASS  22:CLASS
 23:CLASS
24:CLASS  25:CLASS  26:CLASS



L3      STRUCTURE UPLOADED

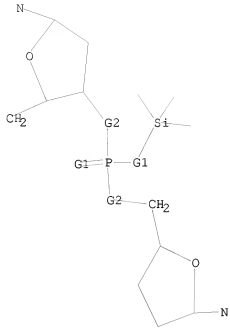
=> s l3
SAMPLE SEARCH INITIATED 13:03:37 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -       29 TO ITERATE

100.0% PROCESSED       29 ITERATIONS                                0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:          257 TO      903
PROJECTED ANSWERS:               0 TO        0

L4            0 SEA SSS SAM L3

=> d l3
L3 HAS NO ANSWERS
L3              STR
```



G1 O,S

G2 C,O,S,N

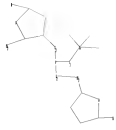
Structure attributes must be viewed using STN Express query preparation.

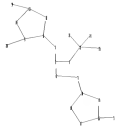
```
=> s l1 sss full
FULL SEARCH INITIATED 13:03:51 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -      615 TO ITERATE

100.0% PROCESSED      615 ITERATIONS                                0 ANSWERS
SEARCH TIME: 00.00.01

L5             0 SEA SSS FUL L1

=>
Uploading C:\Program Files\STNEXP\Queries\10550217silylphosphite.str
```





chain nodes :
1 3 6 7 13 19 20 21 22 23 24 25
ring nodes :
8 9 10 11 12 14 15 16 17 18
chain bonds :
1-7 1-3 1-6 3-22 6-13 7-8 9-20 11-19 13-14 16-21 22-23 22-24 22-25
ring bonds :
8-9 8-12 9-10 10-11 11-12 14-15 14-18 15-16 16-17 17-18
exact/norm bonds :
1-7 1-3 1-6 3-22 6-13 7-8 8-9 8-12 9-10 10-11 11-12 11-19 14-15 14-18
15-16 16-17 16-21 17-18
exact bonds :
9-20 13-14 22-23 22-24 22-25

G1:O,S

```
G2:C,O,S,N

Match level :
1:CLASS  3:CLASS  6:CLASS  7:CLASS  8:Atom  9:Atom  10:Atom  11:Atom  12:Atom
13:CLASS
14:Atom  15:Atom  16:Atom  17:Atom  18:Atom  19:CLASS  20:CLASS  21:CLASS  22:CLASS
 23:CLASS
24:CLASS  25:CLASS



L6      STRUCTURE UPLOADED

=>  s l6
SAMPLE SEARCH INITIATED 13:04:49 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -       29 TO ITERATE

100.0% PROCESSED       29 ITERATIONS                                0 ANSWERS
SEARCH TIME: 00.00.01

FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:          257 TO      903
PROJECTED ANSWERS:               0 TO        0

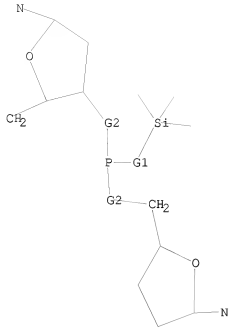
L7            0 SEA SSS SAM L6

=> s l6 sss full
FULL SEARCH INITIATED 13:04:56 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -      615 TO ITERATE

100.0% PROCESSED      615 ITERATIONS                                0 ANSWERS
SEARCH TIME: 00.00.01

L8            0 SEA SSS FUL L6

=> d l6
L6 HAS NO ANSWERS
L6              STR
```



G1 O,S

G2 C,O,S,N

Structure attributes must be viewed using STN Express query preparation.

=> d his

(FILE 'HOME' ENTERED AT 13:01:51 ON 26 NOV 2008)

FILE 'REGISTRY' ENTERED AT 13:02:07 ON 26 NOV 2008
L1 STRUCTURE UPLOADED
L2 0 S L1
L3 STRUCTURE UPLOADED
L4 0 S L3
L5 0 S L1 SSS FULL
L6 STRUCTURE UPLOADED
L7 0 S L6
L8 0 S L6 SSS FULL

=> log hold

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	358.10	358.31

SESSION WILL BE HELD FOR 120 MINUTES
STN INTERNATIONAL SESSION SUSPENDED AT 13:05:10 ON 26 NOV 2008

Connecting via Winsock to STN

Welcome to STN International! Enter x:x

LOGINID:SSPTAEXO1623

PASSWORD:
 * * * * * * RECONNECTED TO STN INTERNATIONAL * * * * * *
SESSION RESUMED IN FILE 'REGISTRY' AT 13:07:11 ON 26 NOV 2008
FILE 'REGISTRY' ENTERED AT 13:07:11 ON 26 NOV 2008
COPYRIGHT (C) 2008 American Chemical Society (ACS)

COST IN U.S. DOLLARS	SINCE FILE ENTRY	TOTAL SESSION
FULL ESTIMATED COST	358.10	358.31

=>
Uploading C:\Program Files\STNEXP\Queries\10550217silylphos3.str

chain nodes :
1 3 6 7 8 9 10 11 12 13

```
chain bonds :
1-7  1-3  1-6  3-9  6-13  7-8  9-10  9-11  9-12
exact/norm bonds :
1-7  1-3  1-6  3-9  6-13  7-8
exact bonds :
9-10  9-11  9-12


G1:O,S

G2:C,O,S,N

Match level :
1:CLASS  3:CLASS  6:CLASS  7:CLASS  8:Atom  9:CLASS  10:CLASS  11:CLASS  12:CLASS
13:CLASS



L9      STRUCTURE UPLOADED

=> s l9
SAMPLE SEARCH INITIATED 13:07:44 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -      268 TO ITERATE

100.0% PROCESSED      268 ITERATIONS                              15 ANSWERS
SEARCH TIME: 00.00.01

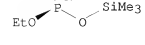
FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:         4378 TO     6342
PROJECTED ANSWERS:              68 TO      532

L10          15 SEA SSS SAM L9

=> d l10 scan

L10  15 ANSWERS   REGISTRY  COPYRIGHT 2008 ACS on STN
IN   Phosphonous acid, [2,2-dimethyl-1-[(trimethylsilyl)oxy]-1-
     [[(trimethylsilyl)oxy]phosphinyl]propyl]-, ethyl trimethylsilyl ester,
     stereoisomer (9CI)
MF   C16 H42 O5 P2 Si3

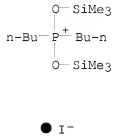
Relative stereochemistry.
```




```
**PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT**

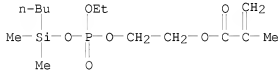

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):3
```

L10 15 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Phosphorus(1+), dibutylbis(trimethylsilanolato)-, iodide, (T-4)- (9CI)
MF C14 H36 O2 P Si2 . I

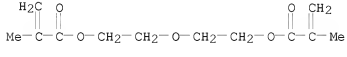


L10 15 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN 2-Propenoic acid, 2-methyl-, oxydi-2,1-ethanediyl ester, polymer with 4-ethoxy-6,6-dimethyl-4-oxido-3,5-dioxa-4-phospha-6-siladec-1-yl 2-methyl-2-propenoate (9CI)
MF (C14 H29 O6 P Si . C12 H18 O5)x
CI PMS

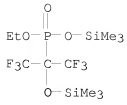
CM 1



CM 2



L10 15 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN Phosphonic acid, [2,2,2-trifluoro-1-(trifluoromethyl)-1-[(trimethylsilyl)oxy]ethyl]-, ethyl trimethylsilyl ester (9CI)
MF C11 H23 F6 O4 P Si2



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=>
Uploading C:\Program Files\STNEXP\Queries\10550217silylphos4.str

```
chain nodes :
1  3  6  7  8  9  10  11  12  13
chain bonds :
1-7  1-3  1-6  3-9  6-13  7-8  9-10  9-11  9-12
exact/norm bonds :
1-7  1-3  1-6  3-9  6-13  7-8
exact bonds :
9-10  9-11  9-12


G1:O,S

G2:O,S,N

Match level :
1:CLASS  3:CLASS  6:CLASS  7:CLASS  8:Atom  9:CLASS  10:CLASS  11:CLASS  12:CLASS
13:CLASS



L11     STRUCTURE UPLOADED

=> s l11
SAMPLE SEARCH INITIATED 13:08:48 FILE 'REGISTRY'
SAMPLE SCREEN SEARCH COMPLETED -      228 TO ITERATE

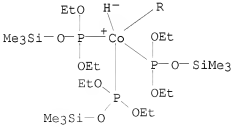
100.0% PROCESSED      228 ITERATIONS                              6 ANSWERS
SEARCH TIME: 00.00.01

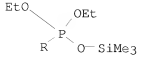
FULL FILE PROJECTIONS:  ONLINE  **COMPLETE**
                        BATCH   **COMPLETE**
PROJECTED ITERATIONS:         3655 TO     5465
PROJECTED ANSWERS:               6 TO      266

L12           6 SEA SSS SAM L11

=> d l12 scan

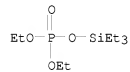
L12  6 ANSWERS   REGISTRY  COPYRIGHT 2008 ACS on STN
IN   Cobalt, tetrakis(diethyl trimethylsilyl phosphite-κP)hydro- (9CI)
MF   C28 H77 Co O12 P4 Si4
CI   CCS
```





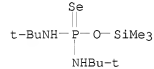
HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):2

L12 6 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN   Phosphoric acid, diethyl triethylsilyl ester
MF   C10 H25 O4 P Si



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

L12 6 ANSWERS REGISTRY COPYRIGHT 2008 ACS on STN
IN   Phosphorodiamidoselenoic acid, N,N'-bis(1,1-dimethylethyl)-,
     O-(trimethylsilyl) ester
MF   C11 H29 N2 O P Se Si



PROPERTY DATA AVAILABLE IN THE 'PROP' FORMAT

HOW MANY MORE ANSWERS DO YOU WISH TO SCAN? (1):0

=> s l11 sss full
FULL SEARCH INITIATED 13:09:09 FILE 'REGISTRY'
FULL SCREEN SEARCH COMPLETED -   4947 TO ITERATE

100.0% PROCESSED   4947 ITERATIONS   248 ANSWERS
SEARCH TIME: 00.00.01

L13   248 SEA SSS FUL L11

=> file hcapluis
'HCAPLUIS' IS NOT A VALID FILE NAME
SESSION CONTINUES IN FILE 'REGISTRY'
Enter "HELP FILE NAMES" at an arrow prompt (=>) for a list of files
that are available. If you have requested multiple files, you can
specify a corrected file name or you can enter "IGNORE" to continue
accessing the remaining file names entered.

=> file hcaplus

COST IN U.S. DOLLARS | SINCE FILE ENTRY | TOTAL SESSION
FULL ESTIMATED COST | 537.38 | 537.59

FILE 'HCAPLUS' ENTERED AT 13:09:16 ON 26 NOV 2008
USE IS SUBJECT TO THE TERMS OF YOUR STN CUSTOMER AGREEMENT.
PLEASE SEE "HELP USAGETERMS" FOR DETAILS.

FILE COVERS 1907 - 26 Nov 2008 VOL 149 ISS 22
FILE LAST UPDATED: 25 Nov 2008 (20081125/ED)

HCAplus now includes complete International Patent Classification (IPC) reclassification data for the third quarter of 2008.

New CAS Information Use Policies, enter HELP USAGETERMS for details.

This file contains CAS Registry Numbers for easy and accurate substance identification.

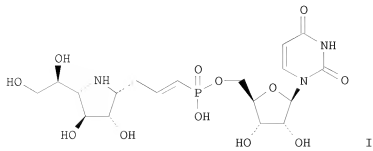
```
=> s l13
L14         512 L13

=> s nucleotide or DNA or RNA
         492409 NUCLEOTIDE
         927250 DNA
         361161 RNA
L15     1377430 NUCLEOTIDE OR DNA OR RNA

=> s l14 and l15
L16           8 L14 AND L15

=> d l16 1-8 ti abs bib

L16  ANSWER 1 OF 8  HCAPLUS  COPYRIGHT 2008 ACS on STN
TI   Convergent and Stereoselective Synthesis of Iminosugar-Containing Galf and
     UDP-Galf Mimicks: Evaluation as Inhibitors of UDP-Gal Mutase
GI
```



I

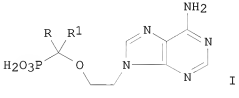
AB The synthesis of a UDP-Galf analog I incorporating a 1,4-dideoxy-1,4-imino-D-galactitol skeleton α-linked to UMP by a 3C-tether and of a series of related pyrrolidine galactofuranose mimicks is reported. These compds. were obtained via the highly stereoselective reaction of silylated nucleophiles with a N-Cbz glucofuranosylamine which afforded the corresponding open-chain product with a 1,2-syn stereochem., as predicted from pioneering studies from Kobayashi. Cyclization of these intermediates afforded α-C-glycosides of imino-galactofuranose carrying various functional groups in the aglycon. Further elaboration of the α-C-allyl substituted derivative by cross-metathesis with a uridin-5'-yl vinylphosphonate provided, after deprotection, the desired original UDP-Galf mimicks. Cleavage of the benzyl ether protecting groups in the iminosugar component using BCl3 proved critical to the success of the synthetic plan. Several of the new 1,4-dideoxy-1,4-imino-D-galactitol derivs. were evaluated as inhibitors of UGM (UDP-galactopyranose mutase) from Escherichia coli; however, none of them exhibited less than mM activities toward this enzyme which catalyzes a crucial step of the biosynthesis of galactofuranose-containing bacterial cell-surface glycans.
AN 2008:355052 HCAPLUS <<LOGINID::20081126>>
DN 148:496256
TI Convergent and Stereoselective Synthesis of Iminosugar-Containing Galf and UDP-Galf Mimicks: Evaluation as Inhibitors of UDP-Gal Mutase
AU Liautard, Virginie; Desvergnes, Valerie; Itoh, Kenji; Liu, Hung-wen; Martin, Olivier R.
CS Institut de Chimie Organique et Analytique, CNRS-UMR 6005, Universite d'Orleans, Orleans, 45067, Fr.
SO Journal of Organic Chemistry (2008), 73(8), 3103-3115
CODEN: JOCEAH; ISSN: 0022-3263
PB American Chemical Society
DT Journal
LA English
OS CASREACT 148:496256
RE.CNT 61 THERE ARE 61 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 2 OF 8 HCAPLUS COPYRIGHT 2008 ACS on STN
TI A Novel Method for the Synthesis of Dinucleoside Boranophosphates by a Borano-Phospho-Triester Method
AB 2'-Deoxyribonucleoside-3'-boranophosphates (nucleotide monomers), including four kinds of nucleobases, were synthesized in good yields by the use of new borano-phosphorylating reagents. We have explored various kinds of condensing reagents as well as nucleophilic catalysts for the borano-phosphorylation reaction with nucleosides. In the synthesis of dinucleoside boranophosphates, undesirable side reactions occurred at the O-4 of thymine and the O-6 of N2-phenylacetyl-guanine bases. To avoid these side reactions, addnl. protecting groups, benzoyl (Bz) and diphenyl-carbamoyl (Dpc) groups, were introduced to thymine and guanine bases, resp. As a result, the condensation reactions proceeded smoothly without any side reactions, and the dimers including four kinds of nucleobases were obtained in excellent yields. In the deprotection of the 5'-DMTr group, Et3SiH was found to be effective as a scavenger for the DMTr cation which caused a P-B bond cleavage. After removal of the other protecting groups by the conventional procedure, four kinds of dinucleoside boranophosphates were obtained in good yields.
AN 2004:539571 HCAPLUS <<LOGINID::20081126>>
DN 141:243756
TI A Novel Method for the Synthesis of Dinucleoside Boranophosphates by a Borano-Phospho-Triester Method
AU Shimizu, Mamoru; Wada, Takeshi; Oka, Natsuhisa; Saigo, Kazuhiko

CS Department of Integrated Biosciences, Graduate School of Frontier Sciences, University of Tokyo, Chiba, 277-8562, Japan
SO Journal of Organic Chemistry (2004), 69(16), 5261-5268
CODEN: JOCEAH; ISSN: 0022-3263
PB American Chemical Society
DT Journal
LA English
OS CASREACT 141:243756
RE.CNT 21 THERE ARE 21 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 3 OF 8 HCAPLUS COPYRIGHT 2008 ACS on STN
TI 2-Pyridylphosphonates: a new type of modification for nucleotide analogues
AB Suitably protected dithymidine H-phosphonates afforded the corresponding dinucleoside 2-pyridylphosphonates upon treatment with N-methoxypyridinium tosylate in acetonitrile in the presence of 1,8-diazabicyclo[5.4.0]undec-7-ene (DBU). The reaction was rapid (ca. 5 min), practically quant. and proceeded stereospecifically, most likely with retention of configuration at the phosphorus center. A simple and efficient protocol for the preparation of a new type of oligonucleotide analog bearing a 2-pyridylphosphonate internucleotide linkage was developed.
AN 2001:167311 HCAPLUS <<LOGINID::20081126>>
DN 134:340651
TI 2-Pyridylphosphonates: a new type of modification for nucleotide analogues
AU Johansson, T.; Kers, A.; Stawinski, J.
CS Arrhenius Laboratory, Department of Organic Chemistry, Stockholm University, Stockholm, S-106 91, Swed.
SO Tetrahedron Letters (2001), 42(11), 2217-2220
CODEN: TELEAY; ISSN: 0040-4039
PB Elsevier Science Ltd.
DT Journal
LA English
OS CASREACT 134:340651
RE.CNT 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L16 ANSWER 4 OF 8 HCAPLUS COPYRIGHT 2008 ACS on STN
TI A simple synthetic route to the preparation of 2-(1-phosphonoalkoxy ethyl derivatives of heterocyclic bases as novel nucleotide analogs related to PMEA
GI

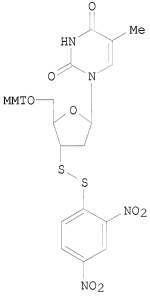


I

AB Various 1,3-dioxolanes undergo ring-opening in the presence of triesters of phosphoric acid and Lewis acids under formation of 1-(2-hydroxyethoxy)alkanephosphonates. These compds. are the key intermediates for the preparation of novel nucleotide analogs, e.g. I [R = R1 = H, Me; R = cyclohexyl, R1 = H; RR1 = (CH2)n, n = 4, 5, 7] related to 9-(2-phosphonomethoxyethyl)adenine (PMEA).

AN 1996:600871 HCAPLUS <<LOGINID::20081126>>
DN 125:329232
OREF 125:61683a,61686a
TI A simple synthetic route to the preparation of 2-(1-phosphonoalkoxy ethyl derivatives of heterocyclic bases as novel nucleotide analogs related to PMEA
AU Rosenberg, Ivan; Kralikova, Sarka
CS Institute Organic Chemistry Biochemistry, Academy Sciences Czech Republic, Prague, 166 10, Czech Rep.
SO Collection of Czechoslovak Chemical Communications (1996), 61(Spec. Issue), S81-S84
CODEN: CCCCAK; ISSN: 0010-0765
PB Institute of Organic Chemistry and Biochemistry, Academy of Sciences of the Czech Republic
DT Journal
LA English
OS CASREACT 125:329232

L16 ANSWER 5 OF 8 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Application of the Michaelis-Arbuzov reaction to the synthesis of internucleoside 3'-S-phosphorothiolate linkages
GI



I

AB The S-(aryldisulfanyl)deoxythymidines, e.g. I, have been prepared by the reaction of 5'-O-monomethoxytrityl-3'-thiothymidine with the appropriate arenesulfenyl chloride. These disulfides undergo a Michaelis-Arbuzov reaction with simple trialkyl phosphites to yield 5'-O-monomethoxytrityl-3'-thiothymidin-3'-yl O,O-dialkyl phosphorothiolates. More interestingly, 3'-deoxy-3'-S-(2,4-dinitrophenylsulfanyl)-5'-O-monomethoxytritylthymidine I reacts with a variety of thymidin-5'-yl dialkyl phosphites to give dithymidine phosphorothiolate triesters with the phosphorothiolate group protected with either a Me or a 2-cyanoethyl group.

3'-O-(tert-Butyldimethylsilyl)thymidin-5'-yl triethylammoniumphosphonate (II) is converted into the corresponding bis-(O-trimethylsilyl) phosphite by treatment with bis(trimethylsilyl)trifluoroacetamide. In situ Reaction of this phosphite with disulfide I gives the dithymidine phosphorothiolate diester. Methylation of compound II with Me chloromethanoate, followed by silylation and subsequent reaction with disulfide I, gives the methyl-protected dithymidine phosphorothiolate triester.

AN 1995:47891 HCAPLUS <<LOGINID::20081126>>
DN 122:214405
OREF 122:39211a,39214a
TI Application of the Michaelis-Arbuzov reaction to the synthesis of internucleoside 3'-S-phosphorothiolate linkages
AU Li, Xiang; Scott, Gerard K.; Baxter, Anthony D.; Taylor, Roger J.; Vyle, Joseph S.; Cosstick, Richard
CS Dep. Chem., Univ. Liverpool, Liverpool, L69 3BX, UK
SO Journal of the Chemical Society, Perkin Transactions 1: Organic and Bio-Organic Chemistry (1972-1999) (1994), (15), 2123-9
CODEN: JCPRB4; ISSN: 0300-922X
DT Journal
LA English

L16 ANSWER 6 OF 8 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Bis(N,N-diisopropylamino)trimethylsiloxyphosphine: a versatile phosphite transfer reagent; application in synthesis of phosphorus-modified nucleotides
GI For diagram(s), see printed CA Issue.
AB P-modified nucleotides, e.g., I (R = Me, PhNH, triazolyl, imidazolyl) were prepared from N6-benzoyl-2'-deoxy-5'-O-dimethoxytrityladenosine or 5'-O-dimethoxytritylthymidine, and 31-O-acetyl-N6-benzoyl-2'-deoxyadenosine or 3'-O-acetylthymidine using the versatile phosphite-transfer reagent [(Me2CH)2N]2POSiMe3, to give phosphites II (R = N6-benzoyladenine, thymine, R1 = N6-benzoyladenine, thymine). Treatment of II (R = R1 = thymine) with MeI or R2INCOCONR2I (R1 = anilino, triazolyl, imidazolyl) gave I. I (R = MeSO3, CF3CO2) were also prepared
AN 1990:459753 HCAPLUS <<LOGINID::20081126>>
DN 113:59753
OREF 113:10130h,10131a
TI Bis(N,N-diisopropylamino)trimethylsiloxyphosphine: a versatile phosphite transfer reagent; application in synthesis of phosphorus-modified nucleotides
AU Dabkowski, Wojciech; Michalski, Jan; Qing, Wang
CS Cent. Mol. Macromol. Stud., Pol. Acad. Sci., Lodz, PL-90-3, Pol.
SO Angewandte Chemie (1990), 102(5), 565-6
CODEN: ANCEAD; ISSN: 0044-8249
DT Journal
LA German
OS CASREACT 113:59753

L16 ANSWER 7 OF 8 HCAPLUS COPYRIGHT 2008 ACS on STN
TI A novel approach to the synthesis of deoxynucleoside phosphorofluoridates. II
AB Trimethylsilyl esters R(R1O)POSiMe3 [R = (Me2CH)2N, CF3CH2O; R1OH = protected deoxynucleoside with 3'-OH or 5'-OH free] react with SO2ClF in quant. and fully chemoselective way to give deoxynucleoside fluorophosphates R(R1O)P(O)F of high purity under extremely mild conditions.
AN 1989:95692 HCAPLUS <<LOGINID::20081126>>
DN 110:95692
OREF 110:15835a,15838a
TI A novel approach to the synthesis of deoxynucleoside phosphorofluoridates.

II
AU Dabkowski, Wojciech; Cramer, Friedrich; Michalski, Jan
CS Cent. Mol. Macromol. Stud., Pol. Acad. Sci., Bodz, PL-90-362, Pol.
SO Tetrahedron Letters (1988), 29(27), 3301-2
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English
OS CASREACT 110:95692

L16 ANSWER 8 OF 8 HCAPLUS COPYRIGHT 2008 ACS on STN
TI A new phosphorylating agent, bis(2,2,2-trifluoroethyl) trimethylsilyl phosphite. Its application in DNA synthesis by the phosphotriester approach
AB Treatment of (F3CCh2O)2P(O)H with Me3SiCl in the presence of Et3N gave the title compound (F3CCH2O)2POSiMe3 (I). Phosphitylation of 5'-O-protected 2'-deoxyribonucleosides with I in the absence of coupling agents followed by oxidation with m-ClC6H4C(O)OOH gave the deoxyribonucleoside 3'-(2,2,2-trifluoroethyl) phosphates, which are key intermediates for the synthesis of oligodeoxyribonucleotides by the phosphotriester approach.
AN 1986:186800 HCAPLUS <<LOGINID::20081126>>
DN 104:186800
OREF 104:29597a,29600a
TI A new phosphorylating agent, bis(2,2,2-trifluoroethyl) trimethylsilyl phosphite. Its application in DNA synthesis by the phosphotriester approach
AU Imai, Kazuaki; Ito, Tsunehiko; Kondo, Susumu; Takaku, Hiroshi
CS Lab. Org. Chem., Chiba Inst. Technol., Narashino, 275, Japan
SO Nucleosides & Nucleotides (1985), 4(5), 669-79
CODEN: NUNUD5; ISSN: 0732-8311
DT Journal
LA English
OS CASREACT 104:186800

=> s silyl or TMS or TBDMS or trimethylsilyl or butyldimethylsilyl
35039 SILYL
6298 TMS
913 TBDMS
52500 TRIMETHYLSILYL
7483 BUTYLDIMETHYLSILYL
L17 90029 SILYL OR TMS OR TBDMS OR TRIMETHYLSILYL OR BUTYLDIMETHYLSILYL

=> s internucleotide or phosphodiester
1192 INTERNUCLEOTIDE
6444 PHOSPHODIESTER
L18 7453 INTERNUCLEOTIDE OR PHOSPHODIESTER

=> s l17 and l18
L19 80 L17 AND L18

=> s l19 and (PY<2004 or AY<2004 or PRY<2004)
24012898 PY<2004
4790127 AY<2004
4261398 PRY<2004
L20 75 L19 AND (PY<2004 OR AY<2004 OR PRY<2004)

L20 ANSWER 3 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Oligonucleotides having modified nucleoside units with various linkages,

and their uses as antisense agents, ribozymes, aptamers, siRNA, probes, and primers, or when hybridized to RNA, as substrates for RNA cleaving enzymes

AB Disclosed are oligonucleotides that include one or more modified nucleoside units. The examples present the representative preparation of modified nucleosides and nucleoside amidites, for incorporation into said oligonucleotides. The oligonucleotides are particularly useful as antisense agents, ribozymes aptamer, siRNA agents, probes and primers or, when hybridized to an RNA, as a substrate for RNA cleaving enzymes including Rnase H and dsRNase.

AN 2003:951160 HCAPLUS <<LOGINID::20081126>>

DN 140:13688

TI Oligonucleotides having modified nucleoside units with various linkages, and their uses as antisense agents, ribozymes, aptamers, siRNA, probes, and primers, or when hybridized to RNA, as substrates for RNA cleaving enzymes

IN Eldrup, Anne; Cook, Phillip Dan; Parshall, Lynne B.

PA Isis Pharmaceuticals, Inc., USA

SO PCT Int. Appl., 161 pp.
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 1

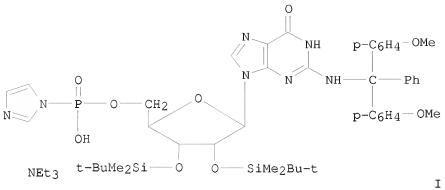
	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2003100017	A2	20031204	WO 2003-US16526	20030523	<--
	WO 2003100017	A3	20040826			
	W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, OM, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW					
	RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG					
	AU 2003241621	A1	20031212	AU 2003-241621	20030523	<--
	US 20040014108	A1	20040122	US 2003-444298	20030523	<--
PRAI	US 2002-383358P	P	20020524	<--		
	WO 2003-US16526	W	20030523	<--		

OS MARPAT 140:13688

L20 ANSWER 6 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN

TI Unique participation of unprotected internucleotidic phosphodiester residues on unexpected cleavage reaction of the Si - O bond of the diisopropylsilandiyl group used as a linker for the solid-phase synthesis of 5'-terminal guanylated oligodeoxynucleotides

GI



I

AB In connection with the synthesis of guanosine-capped oligodeoxynucleotides on polymer supports, we found an unprecedented Si-O bond cleavage reaction, which occurred when polymer-linked oligodeoxynucleotides having unprotected internucleotidic phosphate groups were allowed to react with the guanosine 5'-phosphorimidazolide derivative (I) in the presence of 4-nitro-6-(trifluoromethyl)-1H-benzotriazol-1-ol (Ntbt-OH) as an effective activator in pyridine. This side reaction was confirmed by the fact that the liquid-phase reaction of DMTrTpT-O-Si(iPr2)OEt with a simpler model compound, Me phosphorimidazolide, in the presence of Ntbt-OH gave DMTrTpT. It turned out that the side reaction hardly occurs without unprotected internucleotidic phosphate groups on oligodeoxynucleotides. The detailed study of this side reaction disclosed that Ntbt-OH directly attacks the Si-atom to release oligonucleotides from the resin. It is likely that Ntbt-OH serves as a very strong nucleophile in pyridine, especially to the Si-atom of the linker.

AN 2002:805642 HCAPLUS <<LOGINID::20081126>>

DN 138:170455

TI Unique participation of unprotected internucleotidic phosphodiester residues on unexpected cleavage reaction of the Si - O bond of the diisopropylsilandiyl group used as a linker for the solid-phase synthesis of 5'-terminal guanylated oligodeoxynucleotides

AU Ushioda, Masatoshi; Kadokura, Michinori; Moriguchi, Tomohisa; Kobori, Akio; Aoyagi, Morihiro; Seio, Kohji; Sekine, Mitsuo

CS Department of Life Science, Tokyo Institute of Technology, Yokohama, 226-8501, Japan

SO Helvetica Chimica Acta (2002), 85(9), 2930-2945
CODEN: HCACAV; ISSN: 0018-019X

PB Verlag Helvetica Chimica Acta

DT Journal

LA English

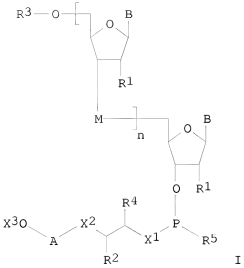
OS CASREACT 138:170455

RE.CNT 57 THERE ARE 57 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 7 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN

TI Process for the synthesis of oligonucleotides

GI



I

AB Synthetic processes are provided for the preparation of oligonucleotides I having phosphodiester, phosphorothioate, phosphorodithioate, or other covalent linkages wherein; A is a diradical derived from a monocyclic or bicyclic aromatic ring system; B is nucleobase; M is is an optionally protected internucleoside linkage; n is 0-50; R1 is independently H, hydroxyl, alkyl, alkenyl, alkynyl, halogen, keto, carboxyl, nitro, nitroso, trifluoromethyl, trifluoromethoxy, O-alkyl, S-alkyl, NH-alkyl, N-dialkyl, O-aryl, S-aryl, NH-aryl, O-aralkyl, S-aralkyl, NH-aralkyl, amino, N-phthalimido, azido, hydrazino, hydroxylamino, isocyanato, silyl, aryl, and a radical or diradical derived from a polyamine, polyamide, polyalkylene glycol, polyether, thiol, nitrile, imidazole, sulfoxide, sulfone, sulfide or disulfide; R2 and R4 are independently H, alkyl, aryl, heteroalkyl, heteroaryl, alkaryl, and aralkyl; or R2R4 together with the carbon atoms to which they are attached form an optionally substituted aliphatic or aromatic ring having from 4 to 6 ring atoms; R3 is hydrogen, hydroxyl protecting group, or a linker connected to a solid support; R5 is amine, heterocycloalkyl, heterocycloalkenyl; X1 and X2 are independently O, S; X3 is alkaryl, aralkyl, sulfonyl, thio, substituted sulfonyl, and substituted thio, wherein said substituent is alkyl, aryl, or alkaryl.. Thus, bisacetate of 2-(2-hydroxyethoxy)phenol was prepared and used in synthesis of oligonucleotides (no data).

AN 2002:425442 HCAPLUS <<LOGINID::20081126>>

DN 137:20552

TI Process for the synthesis of oligonucleotides

IN Cheruvallath, Zacharia S.; Ravikumar, Vasulinga T.; Cole, Douglas L.

PA Isis Pharmaceuticals, Inc., USA

SO U.S., 31 pp., Cont.-in-part of U. S. Ser. No. 111,678, abandoned.
CODEN: USXXAM

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	US 6399756	B1	20020604	US 1999-349659	19990708 <--
	US 6326478	B1	20011204	US 1998-111678	19980708 <--
	US 20020055623	A1	20020509	US 2001-16465	20011211 <--
	US 6521775	B2	20030218		

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     US 20030149260       A1    20030807    US 2002-290587         20021108 <--
     US 6677471           B2    20040113
PRAI US 1998-111678       B2    19980708  <--
     US 1999-349659       A3    19990708  <--
     US 2001-16465        A1    20011211  <--
RE.CNT  69    THERE ARE 69 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20  ANSWER 8 OF 75  HCAPLUS  COPYRIGHT 2008 ACS on STN
TI   Preparation of 2'-modified oligonucleotides having alternating
     internucleoside linkages as protein binding modulators
GI



* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY -  AVAILABLE VIA OFFLINE PRINT *

AB   Novel compds. that mimic and/or modulate the activity of wild-type nucleic
     acids.  Oligonucleotides I which contain at least one region of
     2'-modified nucleosides connected by alternating phosphodiester
     and phosphorothioate linkages wherein: each B is a nucleobase; one of X1
     or X2 is O, and the other of X1 or X2 is S; each R1 is independently, H,
     hydroxyl, C1-C20 alkyl, C3-C20 alkenyl, C2-C20 alkynyl, halogen, thiol,
     keto, carboxyl, nitro, nitroso, nitrile, trifluoromethyl,
     trifluoromethoxy, O-alkyl, S-alkyl, NH-alkyl, N-dialkyl, O-aryl, S-aryl,
     NH- aryl, O-aralkyl, S-aralkyl, NH-aralkyl, amino, N-phthalimido,
     imidazole, azido, hydrazino, hydroxylamino, isocyanato, sulfoxide,
     sulfone, sulfide, disulfide, silyl, aryl, heterocycle,
     carbocycle, intercalator, reporter mol., conjugate, polyamine, polyamide,
     polyalkylene glycol, or polyether, n is 2-50, m is 0-1; were prepared as
     protein binding modulators.  Thus, title oligodeoxyribonucleotides were
     prepared and tested for their ICAM-1 activity.
AN   2001:875242  HCAPLUS <<LOGINID::20081126>>
DN   135:371961
TI   Preparation of 2'-modified oligonucleotides having alternating
     internucleoside linkages as protein binding modulators
IN   Manoharan, Muthiah
PA   Isis Pharmaceuticals, Inc., USA
SO   U.S., 28 pp., Cont.-in-part of U.S. Ser. No. 115,025.
     CODEN: USXXAM
DT   Patent
LA   English
FAN.CNT 2
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     --------------      ----   --------    --------------------   --------
PI   US 6326358          B1     20011204    US 1999-349007         19990707 <--
     US 6277967          B1     20010821    US 1998-115025         19980714 <--
     US 20020165181      A1     20021107    US 2001-965551         20010927 <--
     US 7056896          B2     20060606
PRAI US 1998-115025      A2     19980714  <--
     US 1999-349007      A1     19990707  <--
OS   MARPAT 135:371961
RE.CNT  124   THERE ARE 124 CITED REFERENCES AVAILABLE FOR THIS RECORD
              ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20  ANSWER 17 OF 75  HCAPLUS  COPYRIGHT 2008 ACS on STN
TI   Preparation of 2'-modified oligonucleotides having alternating
     internucleoside linkages as protein binding modulators
GI
```

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

AB Novel compds. that mimic and/or modulate the activity of wild-type nucleic acids. Oligonucleotides I which contain at least one region of 2'-modified nucleosides connected by alternating phosphodiester and phosphorothioate linkages wherein: each B is a nucleobase; one of X1 or X2 is O, and the other of X1 or X2 is S; each R1 is independently, H, hydroxyl, C1-C20 alkyl, C3-C20 alkenyl, C2-C20 alkynyl, halogen, thiol, keto, carboxyl, nitro, nitroso, nitrile, trifluoromethyl, trifluoromethoxy, O-alkyl, S-alkyl, NH-alkyl, N-dialkyl, O-aryl, S-aryl, NH- aryl, O-aralkyl, S-aralkyl, NH-aralkyl, amino, N-phthalimido, imidazole, azido, hydrazino, hydroxylamino, isocyanato, sulfoxide, sulfone, sulfide, disulfide, silyl, aryl, heterocycle, carbocycle, intercalator, reporter mol., conjugate, polyamine, polyamide, polyalkylene glycol, or polyether, n is 2-50, m is 0-1; were prepared as protein binding modulators. Thus, title oligodeoxyribonucleotides were prepared and tested for their ICAM-1 activity.

AN 2000:68345 HCAPLUS <<LOGINID::20081126>>

DN 132:108229

TI Preparation of 2'-modified oligonucleotides having alternating internucleoside linkages as protein binding modulators

IN Manoharan, Muthiah

PA Isis Pharmaceuticals, Inc., USA

SO PCT Int. Appl., 78 pp.
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 2

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 2000003720	A1	20000127	WO 1999-US15347	19990707	<--
	W: AE, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, US, UZ, VN, YU, ZA, ZW					
	RW: GH, GM, KE, LS, MW, SD, SL, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG					
	US 6277967	B1	20010821	US 1998-115025	19980714	<--
	AU 9949738	A	20000207	AU 1999-49738	19990707	<--
	EP 1104303	A1	20010606	EP 1999-933747	19990707	<--
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO					
PRAI	US 1998-115025	A2	19980714	<--		
	WO 1999-US15347	W	19990707	<--		

OS MARPAT 132:108229

RE.CNT 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 19 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN

TI Synthesis and properties of RNA analogs-oligoribonucleotide N3'→P5' phosphoramidates

AB The synthesis and characterization of RNA mimetics, uniformly modified oligoribonucleotide N3'→P5' phosphoramidates containing all four natural bases (uracil, cytosine, adenine and guanine) as well as thymidine and 2,6-diaminopurine, are described. These RNA analogs contain N3'→P5' phosphoramidate internucleotide linkages which

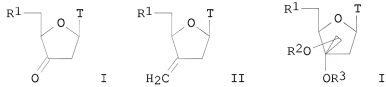
replaced natural RNA O3'→P5' phosphodiester groups. These oligonucleotides were constructed from novel monomeric units (2'-t-butyldimethylsilyl)-3'-(monomethoxyltrityl)-amino-nucleoside-5'-phosphoramidites, the preparation of which is also presented. Several mixed base 9-13mer oligoribonucleotide phosphoramidates were synthesized with step-wise coupling yields of 96-98%. Thermal denaturation expts. demonstrated that ribo-N3'→P5' phosphoramidates form stable duplexes with a complementary RNA strand. Thus, the melting temperature (Tm) of a duplex formed by a 13mer ribo-N3'→P5' phosphoramidate (84°C) was higher than that observed for the iso-sequential natural RNA oligomer (64.0°C), or for the 2'-deoxy-N3'→P5' phosphoramidate counterpart (71.7°C). Moreover, substitution of adenine by 2,6-diaminopurine in an oligoribophosphoramidate pentamer resulted in a very significant increase in the duplex melting temperature (.apprx.7°C per base substitution). The RNA phosphoramidates also showed similar rates of hydrolysis by both RNase A and RNase T1 as compared to natural RNA oligomers. The data presented indicate that this class of RNA analogs may be used as structural and functional RNA mimetics.

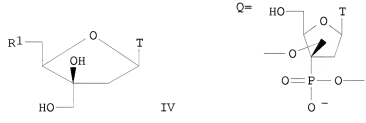
AN 1999:725343 HCAPLUS <<LOGINID::20081126>>
DN 132:251363
TI Synthesis and properties of RNA analogs-oligoribonucleotide N3'→P5' phosphoramidates
AU Matray, Tracy J.; Gryaznov, Sergei M.
CS Geron Corp., Menlo Park, CA, 94025, USA
SO Nucleic Acids Research (1999), 27(20), 3976-3985
CODEN: NARHAD; ISSN: 0305-1048
PB Oxford University Press
DT Journal
LA English
RE.CNT 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 25 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Trimethylsilyl derivatization of nucleic acid anions in the gas phase
AB Ion-mol. reactions between nucleic acid anions, [M-nH]n-, formed via electrospray ionization, and trimethylsilylchloride have been investigated in an ion trap mass spectrometer at a helium bath gas pressure of 1 mtorr. Three types of reactions are observed: (i) SN2(Si) when n>1; (ii) adduct formation when n=1; and (iii) addition followed by elimination of HCl when n=1 and where an acidic phosphate proton is present (e.g., 5'-pdA). The kinetics of these reactions have been studied for various anions derived from the following deoxyadenosine species: 5'-pdA; 5'-pppdA, 5'-d(AA)-3'; 5'-d(AAA)-3' and 5'-d(AAAA)-3'. The following reactivity order is observed: [M-2H]2- of 5'-pppdA>[M-2H]2- of 5'-d(AAA)-3'>[M-3H]3- of 5'-d(AAAA)-3'>[M-3H+TMS]2- of 5'-d(AAAA)-3'>[M-2H]2- of 5'-d(AAAA)-3'>[M-H]- of 5'-pdA»[M-H]- of 5'-d(AA)-3'>[M-H]- of 5'-d(AAA)-3'. In addition, the collision-induced dissociation reactions of the products of these reactions have been studied. Decomposition reactions are consistent with trimethylsilyl attachment on the phosphodiester linkage(s) in oligonucleotides and on the phosphate moieties of 5'-pdA and 5'-pppdA. Comparison of data acquired for modified and unmodified oligonucleotide anions of the same charge state reveal that TMS modification can significantly alter the favored dissociation channels, giving rise to sequence information. The results suggest that gas phase TMS derivatization of oligonucleotide anions, combined with tandem mass spectrometry, can provide sequence information complementary to that derived from unmodified anions.
AN 1997:360495 HCAPLUS <<LOGINID::20081126>>

DN 127:91790
OREF 127:17569a,17572a
TI Trimethylsilyl derivatization of nucleic acid anions in the gas phase
AU O'Hair, Richard A. J.; McLuckey, Scott A.
CS School of Chemistry, University of Melbourne, Parkville, Victoria, Australia
SO International Journal of Mass Spectrometry and Ion Processes (1997), 162(1-3), 183-202
CODEN: IJMPDN; ISSN: 0168-1176
PB Elsevier
DT Journal
LA English
RE.CNT 76 THERE ARE 76 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 38 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Synthesis of novel 3'-C-(hydroxymethyl)thymidines and oligodeoxynucleotide analogs containing compressed 3'-C-hydroxymethyl-linked phosphodiester backbones
GI





AB Lombardo methylenation of the novel 2'-deoxy-3'-ketonucleosides (I; T = thymin-1-yl; R1 = H, Me3CMe2SiO) using CH2Br2, Zn dust, and TiCl4 afforded 2',3'-dideoxy-3'-C-methylene nucleosides (II; R1 = same as above), which were subjected to catalytic dihydroxylation reactions using OsO4, N-methylmorpholine N-oxide, and pyridine. In the case of 5'-deoxynucleoside II (R1 = H), a 1:1 mixture of 3'-C-hydroxymethyl diastereoisomers (III; R1 = R2 = R3 = H) and (IV; R1 = H) was obtained, whereas the 5'-O-silylated nucleoside II (R1 = Me3CMe2SiO) afforded 3'-C-(hydroxymethyl)thymidine derivative III (R1 = Me3CMe2SiO, R2 = R3 = H) as the only product. Sharpless asym. dihydroxylation of I (R1 = H) proceeded in low yield to give III (R1 = H) and IV (R1 = H) as a 10:3 mixture 5'-O-silylated nucleoside III (R1 = Me3CMe2SiO, R2 = R3 = H) was converted into the phosphoramidite synthon III [R1 = Me3CMe2SiO, R2 = 4,4'-dimethoxytrityl, R3 = P(OCH2CH2CN)N(iso-Pr)2], which was applied in automated synthesis of oligodeoxynucleotides containing novel compressed 3'-C-hydroxymethyl-linked phosphodiester backbones, i.e.

5'-d(CACCAACXTCTTCCACA)-3' and 5'-d(TTAACTTCTTCACATXC)-3'.

AN 1995:767982 HCAPLUS <<LOGINID::20081126>>

DN 124:30220

OREF 124:5807a,5810a

TI Synthesis of novel 3'-C-(hydroxymethyl)thymidines and oligodeoxynucleotide analogs containing compressed 3'-C-hydroxymethyl-linked phosphodiester backbones

AU Wengel, Jesper; Svendsen, Margit L.; Joergensen, Pia N.; Nielsen, Claus

CS Dep. Chemistry, Odense Univ., Odense, DK-2300, Den.

SO Nucleosides & Nucleotides (1995), 14(7), 1465-79
CODEN: NUNUD5; ISSN: 0732-8311

PB Dekker

DT Journal

LA English

OS CASREACT 124:30220

L20 ANSWER 39 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN

TI Preparation of backbone modified oligonucleotide analogs through radical coupling

AB Methods for preparing antisense oligonucleotide analogs containing azaalkylenes (CH2RANHCH2, (CH2)2NHRA, RANH(CH2)2, wherein RA = O, R1N and R1 = H, C1-10 alkyl, C2-10 alkenyl, C2-10 alkynyl, alkaryl, etc., all of which are optionally substituted) which have improved nuclease resistance and improved cellular uptake are provided. The oligonucleotide analogs can have altered sugar moieties, altered base moieties or altered inter-sugar linkages. In preferred embodiments, the methods involve radical coupling of 3'- and 5'-substituted or 5'- and 3'-substituted nucleosidic synthons. 3'-O-amino-5'-O-(tert-butyldimethylsilyl)thymidine (preparation given), 3'-O-(tert-butyldimethylsilyl)thymidine-5'-aldehyde and AcOH ere stirred in CH2Cl2 to give the intermediate oxime, treated with NaCNBH3 to give the imine, which was treated with addnl. NaCNBH3 and aqueous HCHO to give the methylated imine and this treated with B4N+ F- to give 3'-dephosphinico-3'-O-(methylimino)thymidylyl-(3'->5')-5'-deoxythymidine. Phosphodiesterase degradation was achieved with 5'-GCGTTTTT(3'-CH2NMeOCH2-4')TTTTTGCG3'. In a nuclease degradation study the tetramer TTTT which contains no phosphodiester linkage, showed complete stability >60 h of incubation in cell extract, suggesting that an end-capped (3' and 5') oligomer containing achiral and neutral backbone will have enhanced half-life.

AN 1995:767390 HCAPLUS <<LOGINID::20081126>>

DN 123:228785

OREF 123:40891a,40894a

TI Preparation of backbone modified oligonucleotide analogs through radical coupling

IN Sanghvi, Yogesh S.; Cook, Phillip Dan

PA Isis Pharmaceuticals, Inc., USA

SO PCT Int. Appl., 71 pp.
CODEN: PIXXD2

DT Patent

LA English

FAN.CNT 326

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9422894	A1	19941013	WO 1994-US3322	19940328	<--
	W: CA, JP					
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE					
	AU 9726244	A	19971106	AU 1997-26244	19970624	<--
	AU 713740	B2	19991209			
	US 6232463	B1	20010515	US 1998-128508	19980804	<--
PRAI	US 1993-40933	A	19930331	<--		
	AU 1993-38025	A3	19930225	<--		

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     US 1997-948151       A1    19971009  <--
OS   CASREACT 123:228785; MARPAT 123:228785

L20  ANSWER 40 OF 75  HCAPLUS  COPYRIGHT 2008 ACS on STN
TI   Synthesis of dimer blocks and their use in assembling oligonucleotides
AB   Dimer blocks having an alkylphosphonate, phosphoramidate, phosphorothioate
     or alkylphosphonothioate internucleotide linkage are prepared by
     condensing a 1st nucleoside derivative having a protective group at a 5' end
     and a condensing group at a 3' end with a second nucleoside derivative having
     a protective group at a 3' end and a hydroxyl group at a 5' end to form a
     dinucleotide derivative having a reduced internucleotide linkage,
     and oxidizing the internucleotide linkage with an appropriate
     oxidizing agent.  5'-O-dimethoxytritylthymidine-3'-O-Me
     N,N-diisopropylphosphoramidite and N4-benzoyl-3'-O-(tert-
     butyldimethylsilyl)-2'-deoxycytidine to give in 2 steps the title
     dimer 5'-O-(dimethoxytrityl)thymidine-3'-O-Me
     phosphorothioate-5'-O-N4-benzoyl-2'-deoxycytidine (I).  PCl3 was added to
     triazole in CH2Cl2 followed by 4-methylmorpholine and to the the mixture was
     added I to give the H-phosphonate of I (II).  I and II were used in the
     synthesis of the oligonucleotide 5'-CtctcGCACCCAtctctctcCTtcT-3';at the
     lower case letters coupling was carried out using I, the rest of the
     sequence was assembled using H-phosphonates.  After the assembly of the
     above sequence, CPG bound oligomer was oxidized using 5% S in
     Et3N/pyridine/CS2 to convert H-phosphonate linkages to phosphorothioate
     linkages, MEO were removed by treatment with PhSH and deprotection with
     concentrated NH4OH at 55° for 10 h.
AN   1995:502931  HCAPLUS <<LOGINID::20081126>>
DN   123:9871
OREF 123:2075a,2078a
TI   Synthesis of dimer blocks and their use in assembling oligonucleotides
IN   Tang, Jin-yan; Iadarola, Patricia L.; Agrawal, Sudhir
PA   Hybridon, Inc., USA
SO   PCT Int. Appl., 43 pp.
     CODEN: PIXXD2
DT   Patent
LA   English
FAN.CNT 2
     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     ----------          ----   --------    -------------------    --------
PI   WO 9415946           A1    19940721    WO 1994-US296          19940107 <--
         W:  AT, AU, BB, BG, BR, BY, CA, CH, CN, CZ, DE, DK, ES, FI, GB, HU,
             JP, KP, KR, KZ, LK, LU, MG, MN, MW, NL, NO, NZ, PL, PT, RO, RU,
             SD, SE, SK, UA, US, VN
         RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE,
             BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, NE, SN, TD, TG
     CA 2153505           A1    19940721    CA 1994-2153505        19940107 <--
     AU 9460243           A     19940815    AU 1994-60243          19940107 <--
     AU 673051            B2    19961024
     EP 678096            A1    19951025    EP 1994-906568         19940107 <--
     EP 678096            B1    19970319
         R:  AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE
     CN 1122137           A     19960508    CN 1994-191181         19940107 <--
     JP 08507752          T     19960820    JP 1994-516255         19940107 <--
     AT 150464            T     19970415    AT 1994-906568         19940107 <--
     ES 2100051           T3    19970601    ES 1994-906568         19940107 <--
     FI 9503363           A     19950707    FI 1995-3363           19950707 <--
PRAI US 1993-2823         A2    19930108  <--
     WO 1994-US296        W     19940107  <--
OS   MARPAT 123:9871

L20  ANSWER 46 OF 75  HCAPLUS  COPYRIGHT 2008 ACS on STN
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TI Diisopropylsilyl-linked oligonucleotide analogs: solid-phase synthesis and physicochemical properties
AB A novel synthetic method has been developed for efficient preparation of silyl-linked oligodeoxyribonucleotide analogs. The method allows, for the first time, automated solid-phase synthesis of long oligomers uniformly linked with the silyl internucleoside bridge. Synthesis of a thymidylate decanucleotide analog illustrates this advance. The preparation of chimeric oligodeoxyribonucleotides containing single or multiple diisopropylsilyl backbone structures along with natural phosphodiester links is also described. These mixed backbone DNA strands were soluble and chemical stable in buffered aqueous solns., as required for physicochem. study. These oligomers demonstrated excellent stability toward cleavage by 3'-exonuclease and good binding affinity with complementary oligonucleotides.
AN 1994:192165 HCAPLUS <<LOGINID::20081126>>
DN 120:192165
OREF 120:34035a,34038a
TI Diisopropylsilyl-linked oligonucleotide analogs: solid-phase synthesis and physicochemical properties
AU Saha, Ashis K.; Sardaro, Mark; Waychunas, Cheryl; Delecki, Daniel; Kruse, L. I.; Kutny, Rusty; Cavanaugh, Paul; Yawman, Anne; Upson, Donald A.
CS Dep. Med. Chem., Sterling Winthrop Inc., Malvern, PA, 19355, USA
SO Journal of Organic Chemistry (1993), 58(27), 7827-31
CODEN: JOCEAH; ISSN: 0022-3263
DT Journal
LA English

L20 ANSWER 47 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Oligonucleotide analogs for use in antisense therapy with enhanced nuclease resistance, ability to activate RNase H, and affinity for complementary target nucleic acid
AB Oligonucleotide analogs with increased nuclease resistance (due to alteration of the backbone), with increased binding affinity for the complementary nucleic acid (due to 2' substituents), and with enhanced ability to activate RNase H due to the presence of 2'-deoxy-erythro-pentofuranosyl nucleotides are described. These analogs are useful for diagnosis, detection, and treatment of conditions susceptible to antisense therapy. A ras-luciferase reporter gene in which the ras sequence contained the point mutation of activated H-ras was prepared and introduced into HeLa cells. The ability of various 18-mer phosphorothioate-linked oligonucleotides to inhibit expression of this chimeric gene was determined The oligonucleotide analogs contained only 2'-deoxy-erythro-pentofuranosyl nucleotides (I), or a mixture of I and 2'-O-methyl-substituted nucleotides (II). The analog containing only I displayed an .apprx.3-fold selectivity towards the mutant ras sequence as compared to the normal ras sequence. Each of the analogs containing II as well as I exhibited greater inhibition of luciferase activity than did that containing only I. Identical analogs containing phosphodiester bonds instead of phosphorothioate linkages were totally inactive.
AN 1993:662536 HCAPLUS <<LOGINID::20081126>>
DN 119:262536
OREF 119:46689a
TI Oligonucleotide analogs for use in antisense therapy with enhanced nuclease resistance, ability to activate RNase H, and affinity for complementary target nucleic acid
IN Cook, Phillip Dan
PA ISIS Pharmaceuticals, Inc., USA
SO PCT Int. Appl., 67 pp.
CODEN: PIXXD2

DT Patent
LA English
FAN.CNT 326

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE	
PI	WO 9313121	A1	19930708	WO 1992-US11339	19921223	<--
	W: AU, BB, BG, BR, CA, CS, FI, HU, JP, KP, KR, LK, MG, MN, MW, NO, NZ, PL, RO, RU, SD, US					
	RW: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, ML, MR, SN, TD, TG					
	CA 2126691	A1	19921223	CA 1992-2126691	19921223	<--
	CA 2126691	C	20030506			
	AU 9334275	A	19930728	AU 1993-34275	19921223	<--
	AU 669353	B2	19960606			
	EP 618925	A1	19941012	EP 1993-902851	19921223	<--
	EP 618925	B1	20010829			
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IE, IT, LI, LU, MC, NL, PT, SE					
	JP 06511155	T	19941215	JP 1993-511953	19921223	<--
	JP 3131222	B2	20010131			
	EP 1044987	A2	20001018	EP 2000-202252	19921223	<--
	EP 1044987	A3	20011004			
	EP 1044987	B1	20060215			
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE					
	JP 2001002696	A	20010109	JP 2000-143468	19921223	<--
	AT 204879	T	20010915	AT 1993-902851	19921223	<--
	AT 317848	T	20060315	AT 2000-202252	19921223	<--
	EP 1695979	A2	20060830	EP 2006-75176	19921223	<--
	EP 1695979	A3	20060906			
	R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE					
	US 5623065	A	19970422	US 1994-244993	19940621	<--
	US 7015315	B1	20060321	US 1995-465866	19950606	<--
	US 5965722	A	19991012	US 1997-848840	19970430	<--
	AU 9726244	A	19971106	AU 1997-26244	19970624	<--
	AU 713740	B2	19991209			
	US 6277603	B1	20010821	US 1998-108911	19980701	<--
	US 6232463	B1	20010515	US 1998-128508	19980804	<--
	US 6399754	B1	20020604	US 1998-135202	19980817	<--
	US 6326199	B1	20011204	US 1999-453514	19991201	<--
	US 20030004325	A1	20030102	US 2001-996263	20011128	<--
	US 7138517	B2	20061121			
	US 20040038274	A1	20040226	US 2003-601242	20030620	<--
	US 20050153921	A1	20050714	US 2004-1386	20041201	<--
	US 20060270624	A1	20061130	US 2006-457715	20060714	<--
	US 20070032446	A1	20070208	US 2006-457703	20060714	<--
PRAI	US 1991-814961	A2	19911224	<--		
	US 1990-463358	B2	19900111	<--		
	US 1990-566977	B2	19900813	<--		
	WO 1991-US243	W	19910111	<--		
	WO 1991-US5720	W	19910812	<--		
	US 1991-801168	B1	19911120	<--		
	US 1991-814861	B2	19911224	<--		
	US 1992-835932	A2	19920305	<--		
	US 1992-854634	B2	19920701	<--		
	US 1992-958134	B2	19921005	<--		
	EP 1993-902851	A3	19921223	<--		
	EP 2000-202252	A3	19921223	<--		
	JP 1993-511953	A3	19921223	<--		
	WO 1992-US11339	W	19921223	<--		
	US 1993-7996	B2	19930121	<--		
	AU 1993-38025	A3	19930225	<--		
	US 1993-39979	B1	19930330	<--		

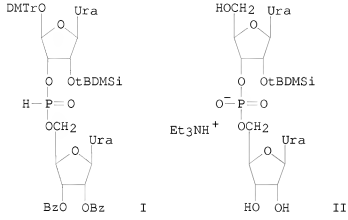
US	1993-40526	A2	19930331	<--
US	1993-40903	A3	19930331	<--
US	1993-40933	B1	19930331	<--
WO	1993-US9346	B1	19931001	<--
US	1993-158352	A3	19931124	<--
US	1994-227180	A2	19940413	<--
US	1994-244993	A2	19940621	<--
US	1994-300072	A3	19940902	<--
US	1994-317289	A2	19941003	<--
US	1994-335046	A2	19941107	<--
US	1995-411734	A2	19950403	<--
US	1995-465866	A2	19950606	<--
US	1995-465880	A2	19950606	<--
US	1995-468037	A2	19950606	<--
US	1995-471973	A3	19950606	<--
US	1995-488256	A2	19950607	<--
US	1997-794493	A2	19970204	<--
US	1997-861306	A3	19970421	<--
US	1997-877317	A3	19970617	<--
US	1997-948151	A1	19971009	<--
US	1997-67458P	P	19971204	<--
WO	1998-US13966	W	19980706	<--
US	1998-135202	A1	19980817	<--
US	1998-144611	A3	19980831	<--
US	1998-203716	A1	19981202	<--
US	1999-343809	B1	19990630	<--
US	1999-453514	A3	19991201	<--
US	2000-462280	B2	20000301	<--
US	2000-684254	A2	20001006	<--
US	2001-781712	A2	20010212	<--
US	2001-799848	A1	20010305	<--
US	2001-951052	A1	20010912	<--
US	2003-601242	A1	20030620	<--

L20 ANSWER 54 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Enzymic and NMR analysis of oligoribonucleotides synthesized with 2'-tert-butyldimethylsilyl protected cyanoethylphosphoramidite monomers
AB The regioisomeric integrity of the internucleotide phosphate linkage in synthetic RNA using 2'-tert-butyldimethylsilyl protection was examined using enzymic and NMR techniques. Two sets of DNA-RNA hybrid nonamers, T3XT5 and T5XT3 (where X = rA, rC, rG, or U) and the tetramer AGCU were analyzed. Enzyme-catalyzed hydrolysis of the nonamers with RNase T2 showed that the linkage at the ribonucleotide was the desired 3'-5'. A control nonamer with a 2'-5' linkage was subjected to the enzyme, and showed no cleavage. High-resolution proton NMR of the tetramer also gave a favorable comparison with the same mol. obtained by nonchem. means.
AN 1990:532685 HCAPLUS <<LOGINID::20081126>>
DN 113:132685
OREF 113:22567a,22570a
TI Enzymic and NMR analysis of oligoribonucleotides synthesized with 2'-tert-butyldimethylsilyl protected cyanoethylphosphoramidite monomers
AU Wang, Yu Ying; Lyttle, Matthew H.; Borer, Philip N.
CS Dep. Chem., Syracuse Univ., Syracuse, NY, 13244, USA
SO Nucleic Acids Research (1990), 18(11), 3347-52
CODEN: NARHAD; ISSN: 0305-1048
DT Journal
LA English

L20 ANSWER 58 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Studies on the t-butyldimethylsilyl group as 2'-O-protection in

oligoribonucleotide synthesis via the H-phosphonate approach

GI



AB Two model compds. I (Ura = uracilyl, DMTr = dimethoxytrityl) and II (tBDMSi = tert-butyldimethylsilyl) have been studied to test the stability of the tert-butyldimethylsilyl group towards conditions used during chemical synthesis of RNA fragments by the H-phosphonate approach. When I was treated with anhydrous acid for 16 h both the H-phosphonate diester and the t-BDMSi group remained intact. Removal of the t-BDMSi group from II with 1.0 M tetrabutylammonium fluoride in THF was complete within 4 h and neither concomitant cleavage nor migration of the phosphodiester linkage could be detected even after 24 h. II was not completely stable towards concentrated aqueous ammonia and both loss of the t-BDMSi group and concomitant cleavage of the phosphodiester linkage occurred upon prolonged treatment. These reactions were substantially suppressed in ethanol containing ammonia solns., however to alleviate this problem during oligoribonucleotide synthesis, more labile protecting groups for heterocyclic bases would be desired. 2'-O-TBDMSi can be considered as a convenient and safe protecting group, which should secure synthesis of oligoribonucleotides with exclusively 3'-5' which should secure synthesis of oligoribonucleotides with exclusively 3'-5'-internucleotidic linkages.

AN 1989:213270 HCAPLUS <<LOGINID::20081126>>

DN 110:213270

OREF 110:35411a,35414a

TI Studies on the t-butyldimethylsilyl group as 2'-O-protection in oligoribonucleotide synthesis via the H-phosphonate approach

AU Stawinski, Jacek; Stroemberg, Roger; Thelin, Mats; Westman, Erik

CS Dep. Org. Chem., Univ. Stockholm, Stockholm, S-106 91, Swed.

SO Nucleic Acids Research (1988), 16(19), 9285-98
CODEN: NARHAD; ISSN: 0305-1048

DT Journal

LA English

L20 ANSWER 59 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN

TI Preparation of internucleotide phosphate analogs via the corresponding hydrogen-phosphonate diester

GI

* STRUCTURE DIAGRAM TOO LARGE FOR DISPLAY - AVAILABLE VIA OFFLINE PRINT *

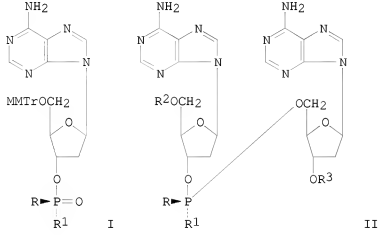
AB Silylation of an H-phosphonate diester I with N,O-bis(trimethylsilyl)acetamide or tert-butyldimethylsilyl chloride affords 3',5'-internucleotidic phosphite triester intermediates II (R = Me, Me3C). Arbuzov reaction of the latter compds. with R1X [R1 = 4,4'-dimethoxytrityl, (2-nitrophenyl)sulfenyl, 4-chlorobenzoyl, X = Cl; R1 = Me, X = iodo; R1 = allyl, X = Br] gives the corresponding phosphonate derivs. III (R1 = as above).
AN 1989:173673 HCAPLUS <<LOGINID::20081126>>
DN 110:173673
OREF 110:28829a,28832a
TI Preparation of internucleotide phosphate analogs via the corresponding hydrogen-phosphonate diester
AU De Vroom, E.; Dreef, C. E.; Van den Elst, H.; Van der Marel, G. A.; Van Boom, J. H.
CS Dep. Org. Chem., Univ. Leiden, Leiden, 2300 RA, Neth.
SO Recueil des Travaux Chimiques des Pays-Bas (1988), 107(10), 592-4
CODEN: RTCPA3; ISSN: 0165-0513
DT Journal
LA English
OS CASREACT 110:173673

L20 ANSWER 61 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Synthesis of hexanucleotide analogs containing diisopropylsilyl internucleotide linkages
AB The synthesis of two silyl-linked hexanucloetide analogs is described. Hypochromicity and CD measurements indicate that the thymidine hexanucleotide analog bears a strong resemblance to its phosphodiester-linked counterpart.
AN 1989:8579 HCAPLUS <<LOGINID::20081126>>
DN 110:8579
OREF 110:1579a,1582a
TI Synthesis of hexanucleotide analogs containing diisopropylsilyl internucleotide linkages
AU Cormier, James F.; Ogilvie, Kevin K.
CS Dep. Chem., McGill Univ., Montreal, QC, H3A 2K6, Can.
SO Nucleic Acids Research (1988), 16(10), 4583-94
CODEN: NARHAD; ISSN: 0305-1048
DT Journal
LA English

L20 ANSWER 63 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN
TI A new strategy for dinucleotide synthesis via a phosphite route involving phosphorochloridates as intermediates
AB Readily available nucleoside trimethylsilyl phosphites and analogous compds. are transformed in high yield into the corresponding phophorochloridates by reaction with SOCl2. These compds. are employed as efficient reagents for internucleotide linkage formation.
AN 1988:187166 HCAPLUS <<LOGINID::20081126>>
DN 108:187166
OREF 108:30771a,30774a
TI A new strategy for dinucleotide synthesis via a phosphite route involving phosphorochloridates as intermediates
AU Dabkowski, Wojciech; Cramer, Friedrich; Michalski, Jan
CS Cent. Mol. Macromol. Stud., Pol. Acad. Sci., Lodz, PL-90-362, Pol.

SO Tetrahedron Letters (1987), 28(31), 3559-60
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English
OS CASREACT 108:187166

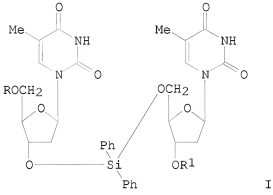
L20 ANSWER 64 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Stereospecific formation of the P-chiral internucleotide linkage. Synthesis of diastereoisomeric 2'-deoxyadenylyl(3',5')2'-deoxyadenylyl S-methyl phosphorothioates via nucleoside hydroxyl activation
GI



AB Phosphorylation of 5'-O-monomethoxytrityl-2'-deoxyadenosine with 50% molar excess of p-O2NC6H4OP(O)(NHPh)Cl in pyridine, followed by chromatog. separation gave phosphoramidates [I; MMTr = monomethoxytrityl; R = PhNH, R1 = p-O2NC6H4O (Sp isomer); R = p-O2NC6H4O, R1 = PhNH (Rp isomer)], which were treated with NaH and CS2 in dioxane-DMF and then with MeI in Me2CO to give phosphorothioates [I; R = MeS, R1 = p-O2NC6H4O (Rp isomer); R = p-O2NC6H4O, R1 = MeS (Sp isomer)]. The above phosphorothioates were treated with BuLi and 3'-O-tert-butyldimethylsilyl -2'-deoxyadenosine in THF to give dinucleotides with P-chiral internucleotide linkage [II; R = O, R1 = MeS (Rp isomer); R = MeS, R1 = O (Sp isomer); R2 = MMTr, R3 = Si(CMe3)Me2], which were deprotected to give II (R = O, R1 = S; R = S, R1 = O; R2 = R3 = H).
AN 1987:423641 HCAPLUS <<LOGINID::20081126>>
DN 107:23641
OREF 107:4015a,4018a
TI Stereospecific formation of the P-chiral internucleotide linkage. Synthesis of diastereoisomeric 2'-deoxyadenylyl(3',5')2'-deoxyadenylyl S-methyl phosphorothioates via nucleoside hydroxyl activation
AU Lesnikowski, Zbigniew J.; Sibinska, Anna
CS Cent. Mol. Macromol. Stud., Pol. Acad. Sci., Lodz, 90-362, Pol.
SO Tetrahedron (1986), 42(18), 5025-34
CODEN: TETRAB; ISSN: 0040-4020
DT Journal
LA English

OS CASREACT 107:23641

L20 ANSWER 66 OF 75 HCAPLUS COPYRIGHT 2008 ACS on STN
TI Synthesis of a thymidine dinucleotide analog containing an internucleotide silyl linkage
GI



I

AB Sequential treatment of 5'-O-dimethoxytriylthymidine with Ph2SiCl2 (THF, pyridine) and 3'-O-levulinylthymidine gave 53% protected dinucleotide analog I (R = dimethoxytrityl, R1 = levulinyl), which on detritylation with ZnBr2 gave 78% I (R = H, R1 = levulinyl), which on deprotection with N2H4.H2O gave 67% I (R = R1 = H).
AN 1986:207580 HCAPLUS <<LOGINID::20081126>>
DN 104:207580
OREF 104:32921a,32924a
TI Synthesis of a thymidine dinucleotide analog containing an internucleotide silyl linkage
AU Ogilvie, K. K.; Cormier, J. F.
CS Dep. Chem., McGill Univ., Montreal, QC, H3A 2K6, Can.
SO Tetrahedron Letters (1985), 26(35), 4159-62
CODEN: TELEAY; ISSN: 0040-4039
DT Journal
LA English
OS CASREACT 104:207580